IN THE CLAIMS

1 (original): A collective screen for a rear projection multi-screen display device comprising a plurality of unit screens having at least two types of lengths in a direction of thickness of the screen, with front end surfaces or optical image output faces thereof joined together flush with each other without any clearance therebetween, wherein the collective screen is provided with a single continuous collective optical image output face, the unit screens of different lengths are disposed to be adjacent to each other, each of the unit screens is provided with a plurality of optical fibers which have the same length within the range of 5 mm to 100 cm and are integrally joined together so that at least front ends and rear ends thereof are aligned substantially in radial contact with each other, and a rear end surface of each of the unit screens constitutes an optical image input face.

2 (original): The collective screen for a rear projection multi-screen display device according to claim 1, wherein: the plurality of unit screens include two types of a short unit screen and a long unit screen which is longer by at least 1 cm or more than the short unit screen in the direction of thickness of the screen, and the optical image output faces of the short unit screens and the optical image output faces of the long unit screens are disposed in a staggered arrangement on the collective optical image output face.

3 (currently amended): The collective screen for a rear projection multi-screen display device according to claim 1 [[or 2]], wherein the optical image input face of the long unit screen is surrounded by a mask member for shielding any leakage light of an optical image out of the optical image input face of the long unit screen, the optical image being projected onto the optical image input face.

4 (currently amended): The collective screen for a rear projection multi-screen display device according to claim 1[[, 2 or 3]], wherein an antireflective coating is applied to an outer circumferential surface of the long unit screen adjacent to the optical image input face of the short unit screen in a range of at least 5 mm from the optical image input face of the short unit screen towards the rear end thereof.

5 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 4~~ claim 1, comprising a support frame for restraining at least an outer circumference of the long unit screen near the optical image input

face to support the long unit screen.

6 (original): The collective screen for a rear projection multi-screen display device according to claim 5, wherein the support frame is configured to shield any leakage light of an optical image out of the optical image input face of the long unit screen, the optical image being projected onto the optical image input face.

7 (currently amended): The collective display screen according to ~~any one of claims 1 to 6~~ claim 1, comprising a collective screen support framework for surrounding the single continuous collective optical image output face and securely restraining a front-end outer circumference of the unit screens bundled to constitute the collective optical image output face.

8 (currently amended): The collective screen for a rear projection multi-screen display device according to claim [[5 or]] 6, comprising a collective screen support framework for surrounding the single continuous collective optical image output face and securely restraining a front-end outer circumference of the unit screens bundled to constitute the collective optical image output face, and the collective screen support framework is provided integrally with the support frame.

9 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 8~~ claim 1, wherein the optical fiber has a quadrangular rear end surface, and the optical image input face of the unit screen is formed in a quadrangular shape with the quadrangular rear end surfaces joined together.

10 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 8~~ claim 1, wherein the optical fibers have a regular hexagonal rear end surface and are closely joined together for these regular hexagonal shapes to be formed in a most densely filled arrangement, thereby forming the optical image input face.

11 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 8~~ claim 1, wherein the optical fibers have a ~~circlar~~ circular rear end surface and are closely joined together for these ~~circlar~~ circular shapes to be formed in a most densely filled arrangement, thereby forming the optical image input face.

12 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 11~~ claim 1, wherein the optical fibers have a quadrangular front end surface, and these quadrangular front end surfaces are joined together so as to be disposed with the same pitch in vertical and horizontal directions of the screen, thereby forming the optical image output face.

13 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 11~~ claim 1, wherein the optical fibers have a regular hexagonal front end surface, and these regular hexagonal front end surfaces are joined together for these regular hexagonal shapes to be formed in a most densely filled arrangement, thereby forming the optical image output face.

14 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 11~~ claim 1, wherein the optical fibers have a ~~circlar~~ circular front end surface, and these ~~circlar~~ circular front end surfaces are closely joined together for these circular shapes to be formed in a most densely filled arrangement, thereby forming the optical image output face.

15 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 11~~ claim 1, wherein the optical fibers have a circular front end surface, and these circular shapes are joined together so as to be disposed with the same pitch as a diameter of the circular shape in vertical and horizontal directions of the screen, thereby forming the optical image output face.

16 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 15~~ claim 1, for use in a rear projection multi-screen wherein the optical fiber has a shape of a hollow core pipe.

17 (original): The collective screen for a rear projection multi-screen display device according to claim 16, wherein the front end surface of the optical fiber is coated with a black coating layer.

18 (currently amended): The collective screen for a rear projection multi-screen display device according to claim 16 [[or 17]], wherein the rear end surface of the optical fiber is coated with a black coating layer.

19 (currently amended): The collective screen for a rear projection multi-screen

display device according to ~~any one of claims 1 to 19~~ claim 1, wherein the optical fibers constituting the unit screen are formed of either resin or silica.

20 (currently amended): The collective screen for a rear projection multi-screen display device according to claim 16~~, 17 or 18~~, wherein the optical fibers constituting the unit screen are formed of a metal channel member with an inner circumferential surface of a hollow core serving as a reflective face.

21 (original): The collective screen for a rear projection multi-screen display device according to claim 20, wherein the metal channel member is formed of a thin metal plate which is bent into a generally rectangular waveform so as to have inner hollow cores and allow the cores to be disposed successively.

22 (original): The collective screen for a rear projection multi-screen display device according to claim 21, wherein the thin metal plate is corrugated, and a plurality of the thin metal plates are joined together one on another in a direction of thickness so as to close the hollow cores, to constitute the unit screens.

23 (original): The collective screen for a rear projection multi-screen display device according to claim 22, wherein the thin metal plate is formed to provide successive quadrangular cross sections, and two of the quadrangular cross sections are opposed to each other to form a quadrangle of a doubled cross-sectional area as a core.

24 (original): The collective screen for a rear projection multi-screen display device according to claim 23, wherein the thin metal plate is formed to have successive trapezoidal cross sections, and two of the trapezoidal cross sections are opposed to each other to form a hexagonal core.

25 (original): The collective screen for a rear projection multi-screen display device according to claim 21, wherein: the thin metal plate is corrugated; the thin metal plate is connected with a thin right flat reinforcing metal plate to close the quadrangular cross sections and thus form closed quadrangular cross sections disposed successively side by side; and the corrugated thin metal plate and the reinforcing thin metal plate are joined together one on the other in a direction of thickness, thereby forming the unit screens.

26 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 21 to 25~~ claim 21, wherein the inner

circumferential surface of the hollow core of the optical fiber is tapered near an end face of the optical fiber to be increased in inner diameter toward the end face and to form an edge on which the metal channel member has a material thickness of 0.05 mm or less on the end face.

27 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 19~~ claim 1, wherein an outer circumferential surface of an end portion of the optical fiber is coated with a black coating layer in a range of at least 3 mm from the end face of the optical fiber.

28 (original): The collective screen for a rear projection multi-screen display device according to claim 27, for use in a rear projection multi-screen wherein the black coating layer which coats the outer circumferential surface of the end portion of the optical fiber is formed of an adhesive for securely adhering the end portion of the optical fiber in a direction of a diameter thereof.

29 (currently amended): The collective screen for a rear projection multi-screen display device according to ~~any one of claims 1 to 28~~ claim 1, wherein the rear end surface or the optical image input face of the unit screen is concave spherical.

30 (original): A rear projection multi-screen display device, comprising:

a collective screen for serving as a single continuous collective optical image output face, the collective screen having front end surfaces or optical image output faces of a plurality of unit screens being collectively joined together flush with each other without any clearance therebetween, the plurality of unit screens having at least two types of lengths in a direction of thickness of the screen; and

projectors which are the same in number as the unit screens and disposed behind the collective screen corresponding respectively to the unit screens, the projector projecting an optical image onto a rear end surface or an optical image input face of the corresponding unit screen, wherein

the collective screen has the unit screens of different lengths disposed adjacent to each other, and

each of the unit screens is provided with a plurality of optical fibers which have the same length in a range of 5 mm to 100 cm and are integrally joined together so that at least front ends and rear ends thereof are aligned substantially in radial contact with each other.

31 (original): The rear projection multi-screen display device according to claim 30, wherein: the plurality of unit screens include two types of a short unit screen and a long unit screen which is longer by at least 1 cm or more than the short unit screen in the direction of thickness of the screen, and the optical image output faces of the short unit screens and the optical image output faces of the long unit screens are disposed in a staggered arrangement on the collective optical image output face.

32 (currently amended): The rear projection multi-screen display device according to claim 30 [[or 31]], wherein the optical image input face of the long unit screen is surrounded by a mask member for shielding any leakage light of an optical image out of the optical image input face of the long unit screen, the optical image being projected onto the optical image input face.

33 (currently amended): The rear projection multi-screen display device according to claim 30~~, 31 or 32~~, wherein an antireflective coating is applied to an outer circumferential surface of the long unit screen adjacent to the optical image input face of the short unit screen in a range of at least 5 mm from the optical image input face of the short unit screen towards the rear end thereof.

34 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 33~~ claim 30, comprising a support frame for restraining at least an outer circumference of the long unit screen near the optical image input face to support the long unit screen.

35 (original): The rear projection multi-screen display device according to claim 34, wherein the support frame is configured to protrude toward the projector with respect to the optical image input face of the long unit screen and to shield any leakage light of a projected optical image out of the optical image input face.

36 (currently amended): The rear projection multi-screen display device according to claim 34 [[or 35]], wherein a Fresnel lens is attached to each of the support frames associated with the respective unit screens between the projector and the optical image input face of the unit screen associated therewith, the Fresnel lens slightly diverging or generally collimating an optical image projected from the projector.

37 (currently amended): The rear projection multi-screen display device according to

~~any one of claims 30 to 36~~ claim 30, wherein the optical image input face of the unit screen is concave spherical, and a center of optical image emission of the projector is disposed near a center of the concave spherical surface.

38 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 35 and 37~~ claim 30, wherein a Fresnel lens is provided to each of the unit screens between the projector and the optical image input face of the unit screen associated therewith, the Fresnel lens slightly diverging or collimating an optical image diverged when projected from the projector.

39 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 38~~ claim 30, comprising a collective screen support framework for surrounding and securing an outer circumference of the unit screens integrated into one piece to constitute the collective optical image output face.

40 (currently amended): The rear projection multi-screen display device according to claim 34 [[or 35]], wherein a collective screen support framework for surrounding and securing a front-end outer circumference of the unit screens integrated into one piece to constitute the collective optical image output face is integrated with the support frames.

41 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 40~~ claim 30, wherein the optical fiber has a quadrangular rear end surface, and the optical image input face of the unit screen is formed in a quadrangular shape with the quadrangular rear end surfaces joined together.

42 (original): The rear projection multi-screen display device according to claim 41, wherein the optical fiber has a regular quadrangular rear end surface.

43 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 42~~ claim 30, wherein the projector is designed to project a beam of light quadrangular in cross section while scanning across the optical image input face.

44 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 40~~ claim 30, wherein the optical fibers have a hexagonal rear end surface and are closely joined together for these hexagonal shapes to be formed in a most densely filled arrangement, thereby forming the optical image input face.

45 (currently amended): The rear projection multi-screen display device according to

~~any one of claims 30 to 40~~ claim 30, wherein the optical fibers have a circular rear end surface and are closely joined together for these circular shapes to be formed in a most densely filled arrangement, thereby forming the optical image input face.

46 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 40 to 45~~ claim 40, wherein the optical fibers have a quadrangular front end surface, and these quadrangular front end surfaces are joined together so as to be disposed with the same pitch in vertical and horizontal directions of the screen, thereby forming the optical image output face.

47 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 45~~ claim 30, wherein the optical fibers have a regular hexagonal front end surface, and these regular hexagonal front end surfaces are joined together for these regular hexagonal shapes to be formed in a most densely filled arrangement, thereby forming the optical image output face.

48 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 47~~ claim 30, wherein the optical fibers have a ~~circlar~~ circular front end surface, and these ~~circlar~~ circular front end surfaces are closely joined together for these circular shapes to be formed in a most densely filled arrangement, thereby forming the optical image output face.

49 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 47~~ claim 30, wherein the optical fibers have a circular front end surface, and these circular shapes are joined together so as to be disposed with the same pitch in vertical and horizontal directions of the screen, thereby forming the optical image output face.

50 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 49~~ claim 30, for use in a rear projection multi-screen wherein the optical fiber has a shape of a hollow core pipe.

51 (original): The rear projection multi-screen display device according to claim 50, wherein the front end surface of the optical fiber is coated with a black coating layer.

52 (currently amended): The rear projection multi-screen display device according to claim 50 [[or 51]], wherein the rear end surface of the optical fiber is coated with a black

coating layer.

53 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 52~~ claim 30, wherein the optical fibers constituting the unit screen are formed of either resin or silica.

54 (currently amended): The rear projection multi-screen display device according to claim 50~~, 51 or 52~~, wherein the optical fibers constituting the unit screen are formed of a metal channel member with an inner circumferential surface of a hollow core serving as a reflective face.

55 (original): The rear projection multi-screen display device according to claim 54, wherein the metal channel is formed of a thin metal plate which is bent into a rectangular waveform so that quadrangular cross sections with an inner hollow core are successively formed.

56 (original): The rear projection multi-screen display device according to claim 54, wherein the thin metal plate is corrugated, and a plurality of the thin metal plates are joined together one on another in a direction of thickness so as to close the hollow cores, to constitute the unit screens.

57 (original): The rear projection multi-screen display device according to claim 55, wherein the thin metal plate is formed to provide successive quadrangular cross sections, and two of the quadrangular cross sections are opposed to each other to form a quadrangle of a doubled cross-sectional area as a core.

58 (original): The rear projection multi-screen display device according to claim 57, wherein the thin metal plate is formed to have successive trapezoidal cross sections, and two of the trapezoidal cross sections are opposed to each other to form a hexagonal core.

59 (original): The rear projection multi-screen display device according to claim 54, wherein: the thin metal plate is corrugated; the thin metal plate is connected with a thin right flat reinforcing metal plate to close the quadrangular cross sections and thus form closed quadrangular cross sections disposed successively side by side; and the corrugated thin metal plate and the reinforcing thin metal plate are joined together one on the other in a direction of thickness, thereby forming the unit screens.

60 (currently amended): The rear projection multi-screen display device according to

~~any one of claims 54 to 59~~ claim 54, wherein the inner circumferential surface of the hollow core of the optical fiber is tapered near an end face of the optical fiber to be increased in inner diameter toward the end face and to form an edge on which the metal channel member has a material thickness of 0.05 mm or less on the end face.

61 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 60~~ claim 30, wherein an outer circumferential surface of an end portion of the optical fiber is coated with a black coating layer in a range of at least 3 mm from the end face of the optical fiber.

62 (original): The rear projection multi-screen display device according to claim 61, wherein the black coating layer which coats the front-end outer circumferential surface of the optical fiber is formed of an adhesive for securely adhering the front end portion of the optical fiber in a direction of a diameter thereof.

63 (currently amended): The rear projection multi-screen display device according to ~~any one of claims 30 to 60~~ claim 30, wherein the rear end surface or the optical image input face of the unit screen is concave spherical.

64 (cancelled)

65 (cancelled)

66 (cancelled)

67 (cancelled)

68 (cancelled)

69 (cancelled)

70 (currently amended): ~~A flat optical fiber prepared by disposing~~ The rear projection multi-screen display device according to claim 30, wherein a plurality of the optical fibers for a collective screen ~~according to any one of claims 61 to 69~~ are disposed side by side to be integrally formed in a shape of a belt.

71 (currently amended): [[A flat]] The rear projection multi-screen display device according to claim 30, wherein the optical fiber comprising a thin metal plate which is bent into a quadrangular waveform so that quadrangular cross sections are successively formed, wherein a plurality of hollow optical fibers with each of the quadrangular cross sections having a hollow core are disposed side by side and integrally formed in a shape of a belt.

72 (currently amended): The ~~flat optical fiber according to~~ rear projection multi-screen display device according to claim 71, wherein the thin metal plate is corrugated to be connectable one on another in a direction of thickness so as to close the hollow core.

73 (cancelled)

74 (cancelled)

75 (cancelled)